

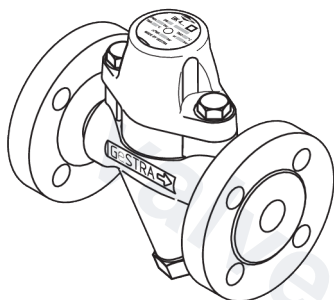
Steam Trap

**BK 45**

**BK 45-U**

**BK 45-LT**

**BK 46**



# Contents

<b>Foreword</b> .....	<b>3</b>
Availability.....	3
Formatting features in the document .....	3
<b>Safety</b> .....	<b>3</b>
Use for the intended purpose .....	3
Basic safety notes .....	4
Information on property damage or malfunctions .....	4
Qualification of personnel.....	5
Protective gear .....	5
Typographic features of warning notes.....	5
Formatting features for warnings of property damage .....	5
<b>Description</b> .....	<b>6</b>
Scope of supply and equipment specification .....	6
Application of European Directives .....	7
Task and function .....	7
<b>Storing and transporting the equipment</b> .....	<b>8</b>
Storing the equipment .....	8
Transporting the equipment .....	8
<b>Mounting and connecting the equipment</b> .....	<b>9</b>
Preparing installation .....	9
Connecting the equipment .....	9
<b>Operation</b> .....	<b>10</b>
<b>After operation</b> .....	<b>10</b>
Removing external dirt deposits .....	11
Maintaining the equipment.....	11
Servicing the equipment and installing spare parts .....	11
<b>Troubleshooting</b> .....	<b>14</b>
<b>Putting the equipment out of operation</b> .....	<b>17</b>
Removing harmful substances.....	17
Removing the equipment .....	17
Re-using equipment after storage.....	18
Returning the valve.....	18
Disposing of the equipment.....	18
<b>Technical data</b> .....	<b>20</b>
Dimensions and weights .....	20
Pressure & temperature ratings.....	21
<b>Declaration of Conformity – Standards and Directives</b> .....	<b>23</b>

## Foreword

This installation & operating manual will help you use the following types of equipment safely and efficiently for their intended purpose.

- ▶ BK 45
- ▶ BK 45-U
- ▶ BK 45-LT
- ▶ BK 46

These steam traps will be called equipment in this document.

This installation & operating manual is intended for anyone commissioning, using, operating, servicing, cleaning or disposing of this equipment and, in particular, for professional after-sales service technicians, qualified personnel and authorised and trained staff.

All of these persons must read and understand the content of this installation & operating manual.

Following the instructions given in this installation & operating manual helps avoiding danger and increases the reliability and service life of the equipment. Please note that in addition to the instructions given in this installation & operating manual you must also observe all locally applicable rules and regulations concerning the prevention of accidents as well as approved safety guidelines for good professional practice.

## Availability

Keep this installation & operating manual together with the plant documentation for future reference. Make sure that this installation & operating manual is available to the operator.

The installation & operating manual is part of the equipment. Please hand over this installation & operating manual when selling the equipment or passing it on.

## Formatting features in the document

Certain text elements of this installation & operating manual feature a specific typographic design. You can easily distinguish the following text elements:

Standard text

*Cross-reference*

- ▶ Listing
  - ▶ Sub-items in listings
- Steps for action.



Here you will find additional useful information and tips serving to assist you in using the equipment to its fullest potential.

## Safety

### Use for the intended purpose

The following thermostatic/thermodynamic steam traps are installed in steam lines:

- ▶ BK 45
- ▶ BK 45-U
- ▶ BK 45-LT
- ▶ BK 46

This equipment is designed for discharging condensed water or air-venting pipes.

The equipment must only be used within the allowable pressure and temperature limits and only if the chemical and corrosive influences on the equipment are taken into account.

Correct use includes compliance with the instructions given in this installation & operating manual, in particular obedience to all safety instructions.

Any other use of the equipment is considered to be improper.

Note that the equipment is also used incorrectly if the materials of the equipment are not suitable for the fluid.

## Basic safety notes

### Risk of severe injuries

- ▶ The equipment is under pressure during operation and can be hot or very cold, depending on the fluid used. Only perform work on the equipment if the following conditions are satisfied:
  - ▶ The pipes must not be under pressure.
  - ▶ All fluid must be thoroughly removed from pipes and the equipment.
  - ▶ Before carrying out any work, the higher-level system must be switched off and secured so it cannot be switched back on by unauthorised persons.
  - ▶ Pipes and the equipment must have cooled to a lukewarm temperature, or around 20 °C.
- ▶ For equipment used in contaminated areas, there is a risk of serious or fatal injury from harmful substances on the equipment. Only perform work on the equipment after it has been thoroughly decontaminated. Wear the protective clothing specified for the contaminated zone during all work.
- ▶ The equipment may only be used with fluids that are not aggressive in contact with material and seals. Otherwise, leaks may occur and hot, cold or toxic fluid may escape.
- ▶ The equipment and its components may only be installed or removed by specialist personnel. Specialist personnel must have knowledge and experience in the following areas:
  - ▶ Producing pipe connections.
  - ▶ Selecting suitable lifting gear for the product and using it safely.
  - ▶ Working with hazardous (contaminated, hot, cold or pressurised) fluids.
- ▶ If the admissible pressure and temperature ratings are exceeded, the equipment may be destroyed and hot, cold or pressurised fluid may escape. Make sure that the equipment is always used within the admissible pressure and temperature ratings.  
You can find information about the pressure and temperature ratings on the name plate and in the “*Technical data*” section.

- ▶ The equipment is under pressure during operation and can become hot or cold, depending on the fluid used. Only bring the equipment into service if contact with surfaces is prevented by insulation or other protection. Always wear protective clothing when working on the equipment and on pipes carrying fluid. You will find information on suitable protective clothing in the safety data sheet for the fluid used.

### Risk of minor injuries

- ▶ Sharp edges on internals present the danger of cuts to hands. Always wear industrial gloves when servicing the equipment.
- ▶ If the support of the equipment during installation is insufficient the equipment might fall down, thereby causing bruises or injuries. Make sure the equipment is safely held in place during installation and cannot fall down. Wear protective safety footwear.

### Information on property damage or malfunctions

- ▶ Malfunctions will occur if the equipment is installed in a wrong position or with the flow arrow pointing in the opposite direction of the fluid flow. This may result in damage to the equipment or the installation. Make sure that the flow arrow on the equipment body matches the indicated direction of the fluid flow in the pipe.
- ▶ If the material is unsuitable for the fluid, increased wear may occur and fluid may escape. Make sure that the material is suitable for the fluid used in your installation.

## Qualification of personnel

Specialist personnel must have knowledge and experience in the following areas:

- ▶ Locally applicable explosion & fire protection and occupational health & safety provisions
- ▶ Work on pressure equipment
- ▶ Producing pipe connections
- ▶ Working with hazardous (hot, cold or pressurised) fluids
- ▶ Lifting and transporting loads
- ▶ All information in this Installation & Operating Manual and other applicable documentation

## Protective gear

The operator must ensure that anyone working on the equipment must wear the required protective clothing and safety gear stipulated for the site of installation. The protective clothing must be suitable for the used media and must protect the wearer against safety and health hazards associated with a particular job to be carried out at the site of installation. Protective clothing & equipment must provide protection from potential hazards, in particular from injuries to:

- ▶ Head
- ▶ Eyes
- ▶ Body
- ▶ Hand
- ▶ Feet
- ▶ Hearing

Note that this list is not exhaustive. The operator must establish personal protective equipment guidelines and specify any additional protective gear that is required if the worker is exposed to a specific risk at the site of installation.

## Typographic features of warning notes



### **DANGER**

Notes with the heading DANGER warn against imminent dangerous situations that can lead to death or serious injuries.



### **WARNING**

Notes with the heading WARNING warn against possibly dangerous situations that could lead to death or serious injuries.



### **CAUTION**

Notes with the heading CAUTION warn against dangerous situations that could lead to minor or moderate injuries.

## Formatting features for warnings of property damage

### ***Attention!***

This information warns of a situation leading to property damage.

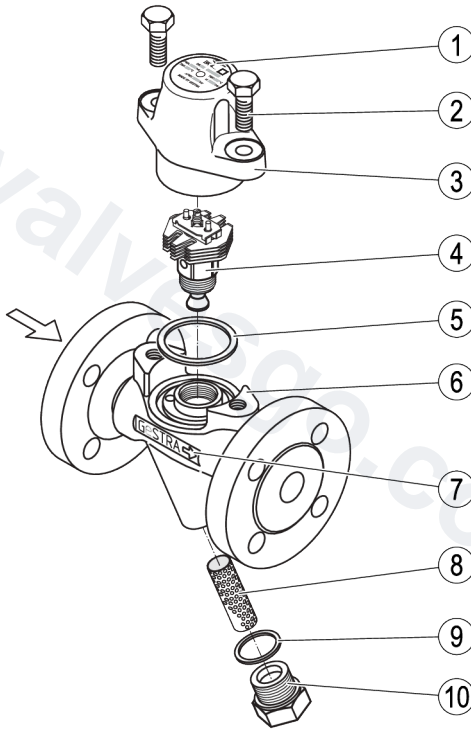
## Description

### Scope of supply and equipment specification

#### Scope of supply

Our equipment is delivered packed and ready for assembly.

#### Equipment specification



No.	Designation
1	Name plate
2	Plug
3	Cover
4	Thermovit regulator
5	Cover gasket

No.	Designation
6	Body
7	Flow arrow
8	Strainer
9	Gasket
10	Sealing plug

## Optional extras

The following add-on equipment is available:

- ▶ Blow-off valve
- ▶ Ultrasonic test device VAPOPHONE®
- ▶ Continuous condensate monitoring equipment

## End connections

The equipment is available with the following end connections:

- ▶ Flanges
- ▶ Butt-weld ends
- ▶ Socket-weld ends
- ▶ Screwed sockets

## Name plate/identification

The following items are indicated on the name plate:

- ▶ Type designation
- ▶ Code letter for opening temperature of Thermovit regulator (only if different from standard value)
- ▶ Nominal size
- ▶ Pressure rating
- ▶ Design pressure
- ▶ Design temperature
- ▶ Max. service temperature at the corresponding service pressure
- ▶ Max. admissible differential pressure
- ▶ Manufacturer

The following items are indicated on the equipment body:

- ▶ Material
- ▶ Date of manufacturing
- ▶ Direction of flow
- ▶ Mark (if required), e.g. CE, UKCA, EAC

## Application of European Directives

### Fluids

The equipment is designed for the following fluids (in accordance with the EU Pressure Equipment Directive or Pressure Equipment (Safety) Regulations in the UK):

- ▶ Fluids of group 2

Due consideration must be given to chemical and corrosive influences.

### Potentially explosive atmospheres

The equipment does not have its own potential source of ignition (as per ATEX Directive). Please pay attention to the following information:

When installed, static electricity may arise between the equipment and the connected system.

When used in potentially explosive atmospheres, the plant manufacturer or plant operator is responsible for discharging or preventing possible static charge.

If it is possible for medium to escape, e.g. through actuating mechanisms or leaks in threaded joints, the plant manufacturer or plant operator must take this into consideration when dividing the area into zones.

## Task and function

### Purpose

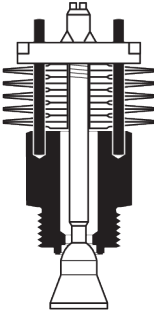
This equipment is designed for discharging condensed water or air-venting steam lines.

### Function of the Thermovit controller

The equipment is fitted with a Thermovit regulator that regulates the flow of the fluid. The Thermovit regulator is screwed into the body.

The Thermovit regulator consists of a stack of several bimetallic plates. As the fluid temperature rises the plates deflect, thereby moving the stage nozzle. The orifice is being closed.

When the installation is cold the Thermovit regulator is open.



The Thermovit regulator of the BK 45 is available for two different opening temperatures:

- ▶ Standard adjustment approx. 15 K undercooling
- ▶ Special adjustment approx. 30 K undercooling (code letter of opening temperature "U" indicated on name plate)

The Thermovit regulator of the BK 46 is adjusted before leaving the factory to close with approx. 15 K undercooling.

## Storing and transporting the equipment

### **Attention!**

Equipment can be damaged if stored or transported improperly.

- ▶ Close all openings with the sealing plugs or covers supplied with the equipment or use similar sealing covers.
- ▶ Protect the equipment against moisture and corrosive atmospheres.
- ▶ Please contact the manufacturer if the specified transport and/or storage requirements cannot be met.

## Storing the equipment

- ▶ Please observe the following items when storing the equipment:
  - ▶ Do not store the equipment for more than 12 months.
  - ▶ Use the supplied sealing plugs or other suitable seal caps in order to seal off all openings of the equipment.
  - ▶ Protect the sealing surfaces and contact areas against mechanical damage.
  - ▶ Protect the equipment and all components against hard shocks and impacts.
  - ▶ Store the equipment only in closed rooms that meet the following environmental conditions:
    - ▶ Air humidity below 50 %, not condensing
    - ▶ Indoor air: clean, salt-free and non-corrosive
    - ▶ Temperature 5–40 °C.
- ▶ Make sure that all these requirements are always met when storing the equipment.
- ▶ Please contact the manufacturer if you cannot comply with the recommended storage conditions.

## Transporting the equipment

- ▶ Meet the requirements for storage also when transporting the equipment.
- ▶ Prior to transport seal off connections with sealing plugs.
- ▶ **i** If you do not have the sealing plugs supplied with the equipment use appropriate seal caps to seal off the connections.
- ▶ For short distances (only a few metres) you can transport the equipment unpacked.
- ▶ When transporting the equipment over larger distances use the original packaging.
- ▶ If you do not have the original packaging use a box that protects the equipment adequately against corrosion and physical damage.



For a short period of time the equipment may be transported even if the temperature is below 0 °C, provided that the equipment is completely empty and dry.

- Drain pipes until they are empty.
- Switch the installation off and protect it against unauthorised or unintended re-activation.

## Mounting and connecting the equipment

### Preparing installation

- Take the equipment out of the transport packaging.
- Check the equipment for transport damage.
- Contact the manufacturer if you detect any kind of shipping damage.

When supplied by the factory, the connections may be sealed off with sealing plugs.

- Remove sealing plugs before mounting the equipment.
- Keep the sealing plugs and the packing for further use.



### DANGER

Risk of extremely severe injury or death due to burns, freezing or intoxication during work on pipes.

- Make sure that there is no hot or cold fluid in the equipment or pipes.
- Make sure that the equipment pipes are not under pressure.
- Make sure that the system is switched off and secured so it cannot be turned on by unauthorised persons.
- Make sure that the equipment and pipes are lukewarm.
- Wear protective clothing that is suitable for the fluid, and use suitable personal protective equipment if necessary.

Information on suitable protective clothing and PPE can be found in the safety data sheet of the fluid used.



### DANGER

Incorrectly connected equipment can result in accidents with extremely severe injuries or death.

- Make sure that only specialist personnel connect the equipment to the pipe.
- Make sure that the direction of flow in the pipe matches the flow direction arrow on the equipment.
- Make sure that the connected pipe does not subject the body to any stress (forces or torques) during installation and operation.

Specialist personnel must have knowledge and experience of the type of pipe connection used.

### Attention!

Equipment will be damaged if the end connections are undersized.

- Make sure that the connections are strong and rigid enough to support the weight of the equipment and to withstand the forces that occur during operation.

To allow easy access for routine servicing and exchanging components observe the indicated withdrawal distances and allow for clearances to adjacent installation parts.

For more information see page 20.

- Make sure that the pipe system of the plant is clean.
- Preferred installation of the equipment with the strainer insert hanging downwards.



Other installation orientations of the strainer are possible in exceptional cases.

### **Attention!**

Any installation position where the strainer insert does not point downwards may impair the correct function of the equipment.

- Please consult the factory with installation details if the equipment cannot be installed in your installation with the strainer hanging downwards.

- Make sure that the equipment is free from foreign matter.
- Install the equipment in the desired, permitted installation position.
- Make sure that the equipment is safely mounted and that all connections are made correctly.

### **Attention!**

Malfunctions may occur if the equipment or condensate line is insulated.

- Make sure that the heat generated by the equipment or the condensate line is dissipated.

## **Operation**

You can check the equipment for correct operation using the GESTRA ultrasonic measuring unit VAPOPHONE®.

- For more details refer to the installation & operating manual of the ultrasonic measuring unit.

Continuous steam trap monitoring is recommended for critical applications.

- For more details refer to the installation & operating manual of the continuous steam trap monitoring unit.

## **After operation**



### **DANGER**

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
- Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- Make sure that the equipment is completely decontaminated before carrying out any service work.
- Follow the pertinent instructions for handling the hazardous substances in question.



### **DANGER**

Risk of extremely severe injury or death due to burns, freezing or intoxication if fluid escapes.

- Make sure that connections and valves are tight after any work on the equipment.
- Make sure that equipment gaskets are intact.

### **Attention!**

Frost damage may occur when the installation is shut down.

- Drain the equipment if ambient temperatures below 0 °C (frost) are to be expected.

## Removing external dirt deposits

- To remove dirt deposits rinse the equipment with fresh water and wipe it with a clean, lint-free cloth.
- To remove any persistent residues use a cleaning agent that is suitable for the material and carefully wipe the equipment with a clean, lint-free cloth.

## Maintaining the equipment

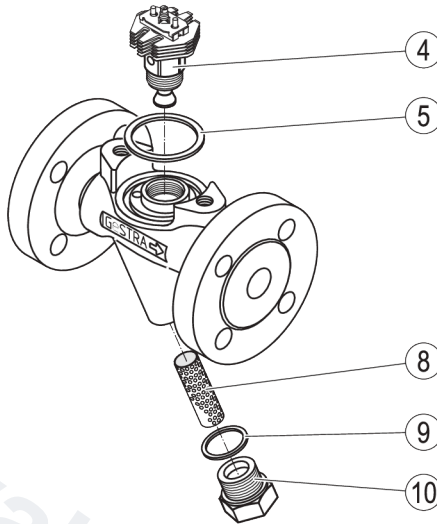
The equipment does not require any particular maintenance.

## Servicing the equipment and installing spare parts

You may exchange the following component parts in case of wear or damage:

- ▶ Thermovit regulator
  - ▶ Strainer
  - ▶ Cover gasket
  - ▶ Gasket
- Replace components only with genuine spare parts from the manufacturer.

## Spare Parts



No.	Designation	Stock code #			
		BK45	BK 45-LT	BK 45-U	BK 46
4	Thermovit regulator	375234		375235	375464
8, 9, 10	Strainer with sealing plug and gasket	375113	375382	375113	375113
5	Cover gasket*)	375159		375159	375159
9	Gasket	375162		375162	375162

\*) Minimum purchasing quantity 50 items. Contact your local dealer for smaller quantities.

### **Removing Thermovit regulator**

To clean the Thermovit regulator and, if necessary, replace it with a new one proceed as follows:

- Use a 16 mm open-end spanner (US: wrench) to unscrew the two screws from the body.
- Lift the cover off the body.
- Remove the cover gasket.
- Use a 22 mm open-end spanner (US: wrench) to unscrew the Thermovit regulator from the body.

### **Cleaning Thermovit regulator**

- Clean the Thermovit regulator with fresh water and a clean lint-free cloth.
- Clean gasket seating surfaces.

### **Checking the component parts for damage**

- Check the removed parts for visible signs of wear or damage.
- Discard and replace any damaged part.

### **Installing Thermovit regulator**

To fit the Thermovit regulator proceed as follows:

- Apply heat-resistant lubricant to the following surfaces:
  - ▶ all threads
  - ▶ the seating surface of the nozzle insert
  - ▶ the seating surface of the cover
- Use a 22 mm open-end spanner (US: wrench) to screw the Thermovit regulator into the body and tighten with a torque of 90 Nm.
- If the cover gasket is damaged replace it with a new one.
- Put the cover gasket into the body.
- Put the cover onto the body.
- Tighten the screws alternately and in several steps with a torque of 25 Nm.

### **Removing and cleaning the strainer**

To remove and, if required, clean or replace the strainer proceed as follows:

- Use a 30 mm open-end spanner (US: wrench) to unscrew the sealing plug from the body.
- Remove the gasket.
- Take out the strainer.
- Clean the sealing plug, the gasket and the strainer with fresh water and a clean lint-free cloth.
- Clean gasket seating surfaces.

### **Checking the component parts for damage**

- Check the removed parts for visible signs of wear or damage.
- Discard and replace any damaged part.

### **Mounting the strainer**

To remove the strainer proceed as follows:

- Apply heat-resistant lubricant to the thread of the sealing plug.
- If the gasket is damaged replace it with a new one.
- Put the gasket onto the sealing plug.
- Insert the strainer into the sealing plug.
- Use a 30 mm open-end spanner (US: wrench) to screw the sealing plug into the body and tighten with a torque of 75 Nm.

## Troubleshooting

<b>Problem</b>	<b>Cause</b>	<b>Remedy</b>
The steam trap is cold or only hand-hot.	The shut-off valves for condensate inlet or outlet are closed.	Open the shut-off valves.
	The condensate inlet or outlet is dirt clogged.	Clean the pipes. Clean the equipment.
The steam trap is blowing off live steam.	The Thermovit regulator is contaminated. There are dirt deposits in the equipment.	Clean the Thermovit regulator. Clean the strainer and the equipment. Replace the Thermovit regulator with a new one.
	The Thermovit regulator is worn down. The seat is leaking.	Replace the Thermovit regulator with a new one.
	The bypass is open.	Close the bypass.
Fluid escapes (equipment is leaking).	The connections are not tight.	Seal off the end connections (e. g. flanged or screwed ends).
	A gasket on the body is defective.	Replace the gasket with a new one.
	The body has been damaged by corrosion or erosion.	Check the resistance of the material for the fluid used. Use a steam trap made from a material that is suitable for the fluid used.
	The equipment has been damaged by frost.	Replace the equipment with a new one. When shutting down the installation make sure that the condensate lines and the steam trap are completely drained.
	The equipment has been damaged by waterhammer.	Replace the equipment with a new one. Take appropriate measures to protect the equipment against waterhammer, e. g. by installing suitable non-return valves.

<b>Problem</b>	<b>Cause</b>	<b>Remedy</b>
<p>Insufficient condensate discharge.</p> <p>Insufficient thermal output of the user.</p>	The shut-off valves for condensate inlet or outlet are closed.	Open the shut-off valves.
	The condensate inlet or outlet is dirt clogged.	Clean the pipes. Clean the equipment. Replace the Thermovit regulator with a new one.
	Steam pressure and condensate flowrate fluctuate considerably. The pressure upstream of the steam trap is too low for the used trap type.	Use a different steam trap type. Contact the manufacturer to find out which trap type is the most suitable for your application.
	The steam trap is undersized.	Use a steam trap with a larger condensate discharge capacity.
	The differential pressure is too small.	Increase the steam pressure. Lower the pressure in the condensate line. Check the size of the condensate line. Install a steam trap with a larger condensate discharge capacity, a pump steam trap or a condensate return unit.
	The pressure upstream of the steam trap is too low. The pressure in the condensate line is too high.	Use a different steam trap type. Contact the manufacturer to find out which trap type is the most suitable for your application.
	The distance between the drain point and the steam trap is too small.	Install the steam trap approx. 1 - 2 m away from the drain point. Lay the condensate line with a gradient so that the condensate is free to fall towards the steam trap.
	The condensate line does not have a slight fall from the drain point towards the steam trap. The condensate is lifted upstream of the steam trap.	Lay the condensate line with a gradient so that the condensate is free to fall towards the steam trap. Change the orientation of the condensate line.
	The condensate temperature is higher than the service temperature of the steam trap. The Thermovit regulator does	If the steam trap or the condensate line is insulated remove the insulation. Use a different steam trap type.

<b>Problem</b>	<b>Cause</b>	<b>Remedy</b>
	not open or only with a time delay.	Contact the manufacturer to find out which trap type is the most suitable for your application.
	Insufficient deaeration.	Provide additional deaeration. Use a different steam trap type. Contact the manufacturer to find out which trap type is the most suitable for your application.

- If faults occur that are not listed above or cannot be corrected, please contact our Technical Service or authorized agency in your country.

valvesgo.com

## Putting the equipment out of operation

### Removing harmful substances



#### **DANGER**

If the equipment is used in contaminated areas there is a risk of severe injuries or death caused by harmful substances in or on the equipment.

- Only qualified personnel are allowed to perform work on contaminated equipment.
- Always wear the protective clothing prescribed for contaminated areas when working on the equipment.
- Make sure that the equipment is completely decontaminated before carrying out any service work.
- Follow the pertinent instructions for handling the hazardous substances in question.

Qualified personnel must have extensive experience with and a working knowledge of:

- ▶ pertinent rules and regulations concerning handling hazardous substances
- ▶ special regulations for handling the hazardous substances encountered on site
- ▶ using the required personal protective equipment (PPE) and clothing



#### **CAUTION**

Environmental damage may be caused by poisonous fluid residues.

- Before disposing of the equipment make sure that it is clean and free of fluid residues.
- For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.

- Remove all residues from the equipment.
- For the disposal of all residues observe the pertinent legal regulations concerning waste disposal.

### Removing the equipment



#### **DANGER**

Risk of extremely severe injury or death due to burns, freezing or intoxication during work on pipes.

- Make sure that there is no hot or cold fluid in the equipment or pipes.
- Make sure that the equipment pipes are not under pressure.
- Make sure that the system is switched off and secured so it cannot be turned on by unauthorised persons.
- Make sure that the equipment and pipes are lukewarm.
- Wear protective clothing that is suitable for the fluid, and use suitable personal protective equipment if necessary.

Information on suitable protective clothing and PPE can be found in the safety data sheet of the fluid used.



#### **CAUTION**

Risk of injuries if the equipment falls down.

- When removing the equipment make sure the it is safely held in place and cannot fall down.

Suitable measures are for instance:

- ▶ Equipment that is not too heavy may be supported by a second person.
- ▶ For heavy equipment use suitable lifting equipment of sufficient strength.
- Detach the end connections of the equipment from the pipes.
- Put the equipment onto a suitable base.
- Store the equipment as described on page 8.

## Re-using equipment after storage

Observe the following instructions if you want to remove the equipment and use it again somewhere else:

- ▶ Make sure that the equipment is free of any fluid residues.
- ▶ Make sure that all connections are in good condition and leak-free.
- ▶ If necessary re-work welded connections in order to ensure that they are in good working condition.
- ▶ Use the equipment only for its intended purpose and the service conditions for which it was specified.

## Returning the valve

You can return the valve to your contractual partner.

- ▶ Make sure that all harmful substances are removed from the valve.
- ▶ Insert the stoppers in the connections.
- ▶ Observe the instructions in section "Transporting the equipment" from page 8.
- ▶ Pack the valve in its original packaging or in a suitable transport packaging.

The transport packaging must protect the valve from damage in the same way as the original packaging.

- ▶ Add the completed and signed decontamination declaration to the valve. The decontamination declaration must be attached to the packaging so that it is accessible from outside.
- ▶ Register the return delivery with your contractual partner before returning the valve.

## Disposing of the equipment



### CAUTION

Environmental damage may be caused by poisonous fluid residues.

- ▶ Before disposing of the equipment make sure that it is clean and free of fluid residues.
- ▶ For the disposal of all materials observe the pertinent legal regulations concerning waste disposal.

The equipment is made from the following materials:

### BK 45, BK 45-U

Component part	DIN / EN	ASME
Body and cover	1.0460	SA105
Bolts	1.7225	A193 B7
Gasket	Graphite/CrNi	
Thermovit regulator	Stainless steel	
Other internals	High grade steels	

### BK 45-LT

Component	ASME
Body and cover	SA 350 LF2
Screws	A193 B7
Gasket	Graphite/CrNi
Thermovit regulator	Stainless steel
Other internals	High grade steels

**BK 46**

<b>Component</b>	<b>DIN / EN</b>	<b>ASTM equivalent *</b>
Body and cover	1.5415	A182 F1
Screws	1.7225	A193 B7
Gasket	Graphite/CrNi	
Thermovit regulator	Stainless steel	
Other internals	High grade steels	

\* Physical and chemical properties comply with DIN grade. ASTM nearest equivalent grade is stated for guidance only.

valvesgo.com

## Technical data

### Dimensions and weights

#### All types

Height [mm]	158
Width of cover [mm]	96
Space required for removing cover [mm]	70
Space required for removing sealing plug [mm]	30

#### Equipment with flanged ends

	EN 1092-1 PN 40			ASME B 16.5 Class 150			ASME B 16.5 Class 300		
	Nominal size DN	15	20	25	15	20	25	15	20
	1/2"	3/4"	1"	1/2"	3/4"	1"	1/2"	3/4"	1"
Overall length [mm]	150		160	150		160	150		160
Diameter of flange [mm]	95	105	115	88.9	98.4	107.9	95.2	117.5	123.8
Weight [kg]	3.7	4.3	4.8	3.7	4.3	4.8	3.7	4.3	4.8

#### Equipment with butt-weld ends

	EN 12627 Edge form to ISO 9692, code number 1.3			ASME B 16.25 ASME B 36.10		
	Nominal size DN	15	20	25	15	20
	1/2"	3/4"	1"	1/2"	3/4"	1"
For pipe	21.3 × 2.0	26.9 × 2.3	33.7 × 2.6	21.3 × 2.8	26.7 × 2.9	33.4 × 3.4
Overall length [mm]	200					
Weight [kg]	2.5					

#### Equipment with socket-weld and butt-weld ends

Socket-weld ends to DIN EN 12760, ASME B 16.11 Class 3000			
Butt-weld ends to G: ISO 228-1, NPT: ASME B 16.11			
Nominal size DN	15	20	25
	1/2"	3/4"	1"
Overall length [mm]	95		
Weight [kg]	2.2	2.1	2.0

## Pressure & temperature ratings

### BK 45 and BK 45-U

Max. differential pressure  $\Delta$  PMX: 22 bar

End connection	Flanged PN 40, EN 1092-1					
p (pressure) [bar]	40.0	33.3	27.6	25.7	23.8	17.1
T (temperature) [°C]	20	200	300	350	400	420

Based on EN 1092-1

End connection	Flanged Class 150, ASME B16.5					
p (pressure) [bar]	19.6	13.8	10.2	8.4	6.5	5.5
T (temperature) [°C]	-29/38	200	300	350	400	425

Based on ASME B16.5, ASME B16.34

End connection	Flanged to Class 300, ASME B16.5, Butt-weld ends to EN 12627, Socket-weld ends to EN 12760, Socket-weld ends to Class 3000, ASME B16.11, Screwed sockets to G, ISO 228-1, Screwed sockets to NPT, ASME B16.11					
p (pressure) [bar]	51.1	43.8	39.8	37.6	34.7	28.8
T (temperature) [°C]	-29/38	200	300	350	400	425

Based on ASME B16.5, ASME B16.34

**BK 45-LT**Max. differential pressure  $\Delta$  PMX: 22 bar

<b>End connection</b>	<b>Flanged Class 150, ASME B16.5</b>					
p (pressure) [bar]	19.6	13.8	10.2	8.4	6.5	5.5
T (temperature) [°C]	-46	200	300	350	400	425

Based on ASME B16.5, ASME B16.34

<b>End connection</b>	<b>Flanged to Class 300, ASME B16.5, Butt-weld ends to EN 12627, Socket-weld ends to EN 12760, Socket-weld ends to Class 3000, ASME B16.11, Screwed sockets to G, ISO 228-1, Screwed sockets to NPT, ASME B16.11</b>					
p (pressure) [bar]	51.1	43.8	39.8	37.6	34.7	28.8
T (temperature) [°C]	-46	200	300	350	400	425

Based on ASME B16.5, ASME B16.34

**BK 46**Max. differential pressure  $\Delta$  PMX: 32 bar

<b>End connection</b>	<b>Flanged PN 40, EN 1092-1</b>					
p (pressure) [bar]	40.0	39.0	34.2	32.3	29.9	27.6
T (temperature) [°C]	20	250	300	350	400	450

Based on EN 1092-1

<b>End connection</b>	<b>Flanged Class 150, ASME B16.5</b>					
p (pressure) [bar]	20.0	14.0	10.2	8.4	6.5	4.7
T (temperature) [°C]	-10/50	200	300	350	400	450

Based on EN 1759-1

<b>End connection</b>	<b>Flanged to Class 300, ASME B16.5, Butt-weld ends to EN 12627, Socket-weld ends to EN 12760, Socket-weld ends to Class 3000, ASME B16.11, Screwed sockets to G, ISO 228-1, Screwed sockets to NPT, ASME B16.11</b>					
p (pressure) [bar]	51.7	44.2	35.0	32.9	30.9	29.8
T (temperature) [°C]	-10/50	200	300	350	400	450

Based on EN 1759-1

## Declaration of Conformity – Standards and Directives

You can find details on the conformity of the equipment and the applicable standards and directives in the Declaration of Conformity and the relevant certificates.

You can download the latest Declaration of Conformity at [www.gestra.com](http://www.gestra.com). You can request the relevant certificates by writing to the following address:

### **GESTRA AG**

Münchener Straße 77

28215 Bremen

Germany

Phone +49 421 3503-0

Fax +49 421 3503-393

e-mail [info@de.gestra.com](mailto:info@de.gestra.com)

Web [www.gestra.com](http://www.gestra.com)

Modifications to the equipment not approved by us will invalidate the Declaration of Conformity and the certificates.



You can find our authorized agents around the world at: [www.gestra.com](http://www.gestra.com)

valvesgo.com

**GESTRA AG**

Münchener Strasse 77  
28215 Bremen  
Germany

Phone +49 421 3503-0  
Fax +49 421 3503-393  
e-mail [info@de.gestra.com](mailto:info@de.gestra.com)  
Web [www.gestra.com](http://www.gestra.com)

**UK Importer**

GESTRA UK Ltd

Unit 1 Sopwith Park, Royce Close,  
West Portway Business Park, Andover,  
Hampshire SP10 3TS  
United Kingdom

810437-09/07-2022 kx\_mm (808837-03) © GESTRA AG Bremen Printed in Germany